CHAPTER 6

SIDEWALKS, CURB RAMPS, AND STEPS

Introduction

Sidewalks, curb ramps, and steps are paved areas for pedestrian traffic. In highway work, sidewalks are usually parallel to the roadway and near it with occasional short lengths connecting the main walk to adjacent walks. Sidewalks are normally constructed by INDOT only to replace existing sidewalks and, therefore, should be placed only where shown on the plans.

Curb ramps are sloping sidewalks that allow wheelchairs to easily move from the sidewalk at curb height to the adjacent pavement at points of pedestrian street crossings. Steps are used to move pedestrian traffic from one elevation to another in a short distance. Bituminous sidewalks, although included in the specifications, are rarely built today.

This chapter will deal with the construction of concrete and bituminous sidewalks, concrete curb ramps, and steps. The procedures of grade preparation, forming, paving, finishing, and curing will be explained in detail. The required materials, joints and inspection procedures will also be discussed.

You may wish to refer to Standard Sheets 604-SWCR-01, 04, 08, & 09 for sidewalk, curb ramp, and step details.

Grade Preparation

Excavation is simply made to the required depth and to a width that will accommodate the forms and braces. The base is shaped and compacted to a firm, even surface and all soft and yielding material must be removed.

Forms

Forms may be wood or metal and must extend for the full depth of the concrete. Forms must be straight, free from warp, and strong enough to resist the pressure of the concrete without springing. A sufficient number of stakes and braces must be used to maintain proper vertical and horizontal alignment until the forms are removed.

Placing Concrete

The base must be thoroughly moistened before placing concrete. A dry base will draw moisture from the fresh concrete an cause a premature failure.

Class A concrete normally will be used. You may refer to section 702 of the Standard Specifications for more information on proportioning, mixing, and placing of concrete

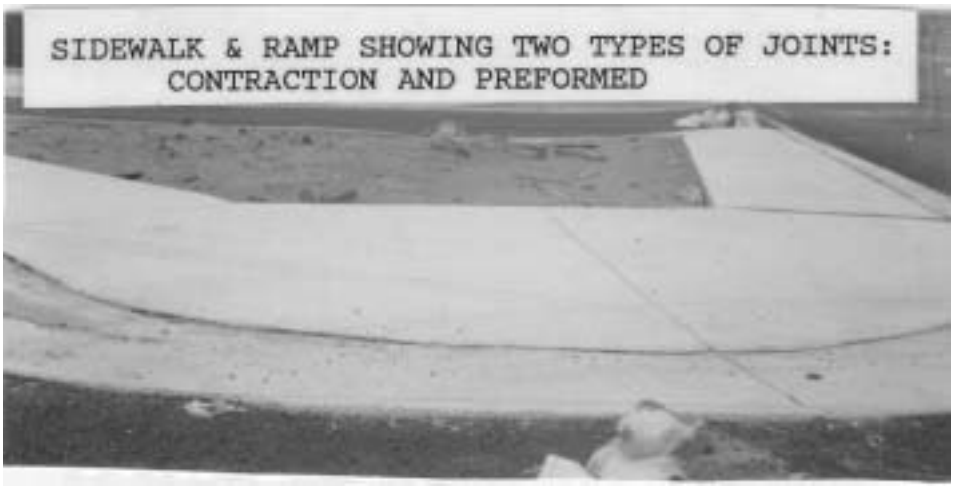
Finishing

The sidewalk surface is finished with a wooden float. No plastering of the surface is permitted. The final finish on curb ramps requires a rougher texture than the sidewalk for better traction and skid resistance. The texturing, usually achieved by coarse brooming, must be done transverse to the ramp slope. Curb ramps will have a running slope not exceeding 12:1 and a cross slope not exceeding 50:1.

All exposed edges are edged with a ¼ inch radius edging tool.

Joints

Check the plans for the type and location of joints and the size of preformed joint filler required.



Joints (cont'd.)

Contraction joints are formed with a ¼" radius jointing tool. All other joints are formed with a ¼" radius edging tool.

Preformed ½" joint filler is placed around all manholes, utility poles etc. that extend into or through the sidewalk. This material is also used where the sidewalk abuts a structure such as a building or bridge. The preformed joint filler must extend for the full depth of the concrete and is to be flush with the surface of the adjacent concrete.

Curing

The concrete must be cured for at least 72 hours. This is accomplished by means of wet burlap mats, plastic sheeting, liquid membrane curing compound, or other approved methods. No pedestrian traffic will be allowed on the concrete during the curing period.

Cement Concrete Steps

The construction requirements for cement concrete steps are the same as previously discussed for sidewalks. In addition, all exposed edges are rounded to a ¼" radius.

Reconstructed Cement Concrete Sidewalk

Where existing sidewalk is to be reconstructed, all disintegrated concrete, brick, stone, or other material must be completely removed and replaced with new concrete.

Unless otherwise specified, the reconstructed portion of the sidewalk is constructed to a minimum depth of four inches and to the width of the adjoining walk but not less than 18 inches from the face of the curb.

Before removal of the existing concrete, a straight saw cut is made with an approved power driven saw at the limits of the removal. If the adjacent sidewalk is damaged during the sawing operation, it will be replaced with no additional payment.

Unless otherwise directed, sidewalk is removed between tool marks and joints. Any adjacent curb that is deteriorated is also to be removed and replaced at the contract unit price for curb.

The new sidewalk joint pattern will be similar to that of the surrounding sidewalk. Sidewalk placed at drives shall be six inches thick or the same depth as the existing drive, whichever is greater.

If re-laying of Portland cement concrete sidewalk is specified then the work will consist of removal and re-laying of concrete, stone slab, or brick sidewalk, care should be taken not to damage the sections. Each section is to be laid on a bed of No. 23 or 24 sand at least 2" in depth. Damaged sections will be replaced.

Bituminous Sidewalk

Grade preparation for bituminous sidewalk is much the same as that for concrete sidewalk, however, the base must be constructed with compacted coarse aggregate as set forth in the plans.

The bituminous mixture is placed in one or more courses as set out in the plans and each course is compacted with a hand operated or power roller. Inaccessible areas may be compacted with a hand tamper.

If the surface is too open or sticky, it may be coated with No. 23 or 24 sand, well broomed over the surface, leaving no excess. This sand, however, is not paid for directly.

Construction & Inspection Procedures

Sidewalks should always be built with smooth transitions to existing walks. There should never be a vertical lip left anywhere that a pedestrian may trip on. When constructing curb ramps, be sure not to exceed the maximum slopes shown in the standards.

When inspecting the various items, all dimensions should be checked carefully before the concrete is poured to ensure that they meet the requirements of the plans and specifications. Occasionally, contractors will form sidewalks with two-by-fours which are only 3-1/2″ high and pour the walk that thickness. This is not acceptable.

The joints should be checked for the proper vertical depth and radius as well as the spacing of the different types.

Perform all on-site testing of materials according to the frequency manual and check to see that all materials are approved for use. Secure all required basis for use for the material records.

Measurement And Payment

Last, but not least, measure and document all items for payment on a daily basis. These measurements shall be accurate enough for final payment so that additional measurements at a later date will not be required. The accepted quantities of concrete sidewalk, curb ramps, and reconstructed & re-laid sidewalk will be paid for at the contract unit price per square yard. HMA for sidewalk will be paid for at the contract unit price per ton, complete in place. Bed course material will be paid for at the contract unit price per ton. Joint material will be paid for at the contract unit price per linear foot. Concrete steps will be paid for at the contract unit price per cubic yard. The costs of excavation, backfill, expansion joint material, and necessary incidentals shall be included in the costs of the pay items.